

In the Drawings:

Please approve the drawing changes as shown in the attached marked-up copy of Figure 1.

REMARKS

As a preliminary matter, with regard to the drawings, Applicant has included herewith a marked-up copy of Figure 1, showing the proposed changes. In the June 14, 2006 Office Action, the Examiner objected to Applicant's revised Figure 1 (filed on May 15, 2006) as allegedly containing new matter. Specifically, the Examiner states that the specification did not disclose the exact proportions and shape of the elbow. Although Applicant disagrees that revised Figure 1 (filed May 15, 2006) includes new matter, in order to expedite prosecution, Applicant has included herewith a further revised version of Figure 1, which only shows elbow 64 and turbulence reducing device 60 schematically, without depicting any specific shape or proportions. A review of paragraph [0034] clearly discusses elbow 64 and turbulence reducing device 60 in the context of Figure 1. Accordingly, no new matter is being added by the proposed changes to Figure 1 enclosed herewith. Accordingly, approval of the proposed drawing changes is respectfully requested.

With regard to the Election of Species Requirement, since revised Figure 1 includes an elbow, the Examiner's rationale for withdrawing Claims 25, 26, 28 and 29 from examination has been obviated. Thus, Claims 25, 26, 28 and 29 read on the elected species shown in Figures 1-4. Accordingly, Applicant respectfully requests that the Examiner reinstate withdrawn Claims 25, 26, 28 and 29.

Claims 1, 2, 5, 6, 12, 14, 15, 20, 22, 24 and 27 stand rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 5,363,699 to McCall. Applicant respectfully traverses this rejection.

Applicant respectfully submits that the McCall reference fails to disclose all of the features of the present invention. In particular, the McCall reference fails to disclose a flow stabilizer that includes, *inter alia*, a flow straightening device in which “at least a portion of the flow straightening device has a diameter less than said internal diameter of said fluid conduit section,” as defined in independent Claims 1, 6, 24 and 27.

One example of the flow straightening device of Claims 1, 6, 24 and 27 is shown in Applicant’s Figure 2, which shows flow straightening device 50 within flow stabilizing device 22 (see also Applicant’s Figure 1). As can be seen in Figure 2, this embodiment of the flow stabilizing device 22 includes a fluid conduit section 38 with an internal diameter defined by layer 42. The Figure 2 embodiment also includes a flow straightening device 50, which, in this embodiment, is in the form of a plurality of vanes 52. As defined in independent Claims 1, 6, 24 and 27, “at least a portion of said flow straightening device [50] has a diameter [that is] less than said internal diameter of said fluid conduit section [38].” Thus, as recited in paragraph [0032] of the present application, the gap between the outer radial edges of the flow straightening device 50 and the internal diameter of the conduit section 38 allows for lateral or radial movement of the end 30 of the fluid conduit section 38, without causing the vanes 52 to come into contact with the inside layer 42 of the conduit section 38.

In contrast, as can be seen in Figures 2 and 3 of the McCall reference, the flow straightening vanes of vane sets 36 and 38, which the Examiner equated with the claimed “flow straightening device,” all have outer radial edges that extend to reach the internal

diameter of conduit 10. Accordingly, vane sets 36 and 38 of the McCall reference cannot be considered as the claimed “flow straightening device” because vane sets 36 and 38 lack at least one portion that “has a diameter [that is] less than said internal diameter of said fluid conduit section,” as defined in independent Claims 1, 6, 24 and 27. Thus, as all of the features recited in independent Claims 1, 6, 24 and 27 are not disclosed in the McCall reference, Applicant respectfully requests the withdrawal of this §102(b) rejection of independent Claims 1, 6, 24 and 27, and associated dependent Claims 2, 5, 12, 14, 15, 20 and 22.

Claims 1, 2, 4-8, 10-12, 14, 15, 24 and 27 stand rejected under 35 U.S.C. §103 as being unpatentable over McCall in view of United States Patent No. 5,273,321 to Richter and further in view of United States Patent No. 6,012,492 in view of Kozyuk.

As discussed above, the McCall reference fails to disclose a flow straightening device in which “at least a portion of the flow straightening device has a diameter less than said internal diameter of said fluid conduit section,” as defined in independent Claims 1, 6, 24 and 27. Additionally, the McCall reference also fails to suggest this feature. Further, neither the Richter reference nor the Kozyuk reference remedy this deficiency, nor were they relied upon as such. Accordingly, as all of the features of independent Claims 1, 6, 24 and 27 are not disclosed or suggested in the cited references, Applicant respectfully requests the withdrawal of this §103 rejection of independent Claims 1, 6, 24 and 27 and associated dependent Claims 2, 4, 5, 7, 8, 10-12, 14 and 15.

Claims 3 and 9 stand rejected under 35 U.S.C. §103 as being unpatentable over McCall in view of Richter and Kozyuk and further in view of United States Patent No. 4,366,746 to Rosencrans. Claim 13 stands rejected under 35 U.S.C. §103 as being unpatentable over McCall in view of Richter and Kozyuk and further in view of United States Patent No. 4,365,932 to Arnaudeau. Applicant respectfully traverses these rejections.

Claims 3, 9 and 13 all depend, directly or indirectly, from either independent Claim 1 or independent Claim 6, and therefore include all of the features of either Claim 1 or Claim 6, plus additional features. Accordingly, Applicant respectfully requests that these §103 rejection of dependent Claims 3, 9 and 13 be withdrawn considering the above remarks directed to independent Claims 1 and 6, and also because the additional references (Rosencrans and Arnaudeau) do not remedy the deficiencies noted above, nor were these additional references relied upon as such.

Claims 16 and 20-22 stand rejected under 35 U.S.C. §103 as being unpatentable over McCall in view of Kozyuk. Applicant respectfully traverses this rejection.

Applicant respectfully submits that one of ordinary skill in the art would not have been motivated to modify the device of McCall in light of the Kozyuk reference in the manner suggested by the Examiner. Furthermore, even assuming *arguendo* that one would have modified the device of McCall in light of Kozyuk, the resulting device fails to include all of the features of the present invention as defined in independent Claim 16.

As correctly acknowledged by the Examiner, the McCall reference lacks the claimed valve. Accordingly, the Examiner relied upon the Kozyuk reference for this feature.

However, the Kozyuk reference does not include a pump, so there is no discussion of the need to reduce the turbulence created by the pump before reaching the valve. Nor is there any discussion of this problem in the McCall reference because McCall lacks a valve. Accordingly, neither reference relates to problem solved by the invention of Claim 16, namely, reducing the turbulence created by a pump, before reaching the valve, in a manner that does not require a length of pipe of between five and ten times the diameter.

The device of McCall is a section of pipe or conduit that is intended to verify the water output capacity of a fire hydrant. *See* col. 1, lines 16-27. Thus, the conduit 10 of Figure 2 of McCall is positioned between a fire hydrant or water pump and a fire hose, or between two sections of fire hose. *See* col. 4, lines 51-56. In contrast, the device of Kozyuk has nothing to do with fire hydrants, or even with measuring fluid output capacity. Instead, the device of Kozyuk relates to a conduit for use in large scale sonochemical reactions (using ultrasonic oscillation) including means for creating and collapsing cavitation bubbles. There is no disclosure or suggestion in either reference that that the sonochemical reactions in Kozyuk have anything to do with McCall's device for measuring the output capacity of fire hydrants, or vice versa. Accordingly, Applicant respectfully submits that one of ordinary skill in the art of fire hydrant fluid flow measurement would not have looked to a device in the sonochemical reaction field. Thus, for at least this reason, Applicant respectfully submits that one of ordinary skill in the art would not have looked to the Kozyuk reference to modify the device of McCall, and therefore Applicant respectfully requests the withdrawal of this §103 rejection of independent Claim 16 and associated dependent Claims 20-22.

Further, Applicant disagrees that one of ordinary skill in the art of measuring the output capacity of fire hydrants would have modified the device of McCall by adding valve 150 of Kozyuk as a “means of controlling the fluid,” as asserted by the Examiner in the June 14, 2006 Office Action. As stated in column 9, lines 16-20, of the Kozyuk reference, valve 150 may optionally be included to control “the local hydraulic resistance . . . to control the sonochemical reactions by altering the static pressure in the cavitation bubbles.” Thus, the stated rationale in Kozyuk for including the valve relates to sonochemical reactions (i.e., chemical reactions using ultrasonic oscillations) and altering cavitation bubbles. However, the device of McCall has nothing to do with sonochemical reactions and/or cavitation bubbles. Accordingly, since the device of McCall does not include the features asserted as being controlled by the valve of Kozyuk, Applicant respectfully submits that one of ordinary skill in the art would not have added the valve of Kozyuk to the device of McCall. Therefore, for this reason also, Applicant respectfully requests the withdrawal of this §103 rejection of independent Claim 16 and associated dependent Claims 20-22.

Additionally, even assuming *arguendo* that one of ordinary skill in the art would have modified McCall in light of Kozyuk, Applicant respectfully submits that the resulting combination would still not include, *inter alia*, the claimed “linear fluid conduit section, with a length extending between said first and second ends, and an internal diameter, said length being less than five times the diameter,” as defined in independent Claim 16.

Applicant’s Figure 2 shows one example of the device of Claim 16, including a fluid conduit section 38 with a flow straightening device 50 that, as shown in Figure 1, is

positioned between pump 16 and valve 20. As disclosed in the instant specification in paragraph [0025], prior art devices without Applicant's fluid conduit section required that the length of pipe between the pump and the valve to be of the order of between five and ten times the diameter of the pipe in order to allow the turbulence created by the pump to decrease to an acceptable level for proper operation of the valve. With Applicant's fluid conduit section, the spatial displacement between the pump and the valve can be reduced to less than five times the pipe diameter because the flow straightening device reduces the turbulence to an acceptable level for the valve.

The object of the device of McCall is to condition/stabilize/homogenize fluid flow through a conduit and to then accurately measure/sample that fluid flow. *See, e.g.*, col. 1, lines 6-13; col. 2, lines 40-48; col. 3, line 65, through col. 4, line 18. Thus, any modifications that hinder the ability to accurately measure/sample the fluid flow would render the device of McCall unsatisfactory for its intended purpose, which is an improper modification. *See e.g.*, MPEP §2143.01(V); *In re Gordon*, 221 USPQ 1125, Fed. Cir. 1984. In order for the valve of Kozyuk to be positioned in a location in the McCall device of Figure 2 such that the length of the linear fluid conduit is "less than five times the diameter," as defined in Claim 16, the valve must be placed between detecting means 32 and stabilizing means 30 (because if the valve is placed to the right of detecting means 32, the length of the fluid conduit is not "less than five times the diameter"). However, since such a valve would create turbulence, the detecting means 32 would not be able to accurately measure the fluid flow (the point of stabilizing means 30 is, in part, to reduce turbulence so that accurate

measurement may be taken). Thus, such a modification is improper because adding the valve at this location would render the device of McCall unsatisfactory for its intended purpose of providing accurate fluid flow measurements. Further, completely eliminating the detecting means 32 is also an improper modification because to do so would also render the device of McCall unsatisfactory for its intended purpose of providing accurate fluid flow measurements. Thus, for at least this additional reason, Applicant respectfully requests the withdrawal of this §103 rejection of independent Claim 16 and associated dependent Claims 20-22.

Claims 17 and 19 stand rejected under 35 U.S.C. §103 as being unpatentable over McCall in view of Kozyuk and further in view of Richter. Claim 18 stands rejected under 35 U.S.C. §103 as being unpatentable over McCall in view of Kozyuk and further in view of Rosencrans. Applicant respectfully traverses these rejections.

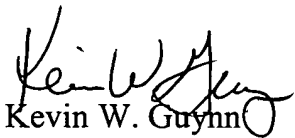
Claims 17-19 all depend from independent Claim 16, and therefore include all of the features of Claim 16, plus additional features. Accordingly, Applicant respectfully requests that these §103 rejections of dependent Claims 17-19 be withdrawn considering the above remarks directed to independent Claim 16, and also because neither the Richter reference nor the Rosencrans reference remedy the deficiencies discussed above, nor were they relied upon as such.

For all of the above reasons, Applicant requests reconsideration and allowance of the claimed invention. Should the Examiner be of the opinion that a telephone conference

would aid in the prosecution of the application, or that outstanding issues exist, the Examiner is invited to contact the undersigned.

Respectfully submitted,

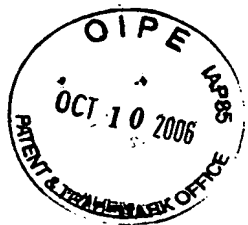
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